

CSSE 490-01—Web Services Development

Exam 2, May 15, 2017

This exam is to be solved using your computer. You will need network access to download incomplete code and upload your solution. Please disable Lync, Skype for Business, IM, email, and other such communication programs before beginning the exam. Any communication with anyone other than a proctor during the exam for any reason, *may result in a failing grade for the course.*

Allowed Resources: Open notes, open computer. Limited network access. You may use the network *only* to access your own files, the course Moodle site and web pages, the course site and web pages lined directly from it, and resources suggested by an exam proctor.

The instructions for the exam are included in this document.

You have a total of 2 periods to complete this exam.

Please begin by writing your name on every page of the exam. We encourage you to skim the entire exam before answering any questions.

Checkout the angular-contact-list project from your individual remote git repository into your local repo. From a terminal (windows command prompt) window, change directory to the angular-contact-list directory. Run

```
$ npm install
```

from your angular-contact-list directory to install all the modules/libraries/packages that you need to complete your exam.

Run the command below to start the Angular application.

```
$ npm start
```

If you wish to test the application, instead of running it, you can execute the following commands at the terminal.

```
$ npm test
```

You can use Ctrl + C to terminate your tests or app at anytime.

Note: You do not need to understand all the code in this project in order to solve all the problems on the exam. You only need to understand enough to solve each problem.

Problem	Poss. Pts.	Earned
1	30	_____
2	16	_____
3	4	_____
Total	50	_____

Exam 1

This is an Angular project about a Contact List Application that allows the user to display existing contacts, add new contacts, update selected contacts, and delete contacts that are no longer needed. The client is not the happiest because the application is not fully functional at this point. Your job is to fix the application so that it becomes fully functional and makes the client happy.

1. (30 points) Now that you have successfully run the `$ npm install` command, you are now in position to run your angular application. Just a reminder, this is done by running the

```
$ npm start
```

command. This will cause `ng serve` to start your server and watch your application for code changes, restarting the server whenever changes are detected. Entering `http://localhost:4200` in your web browser's address bar will load your application.

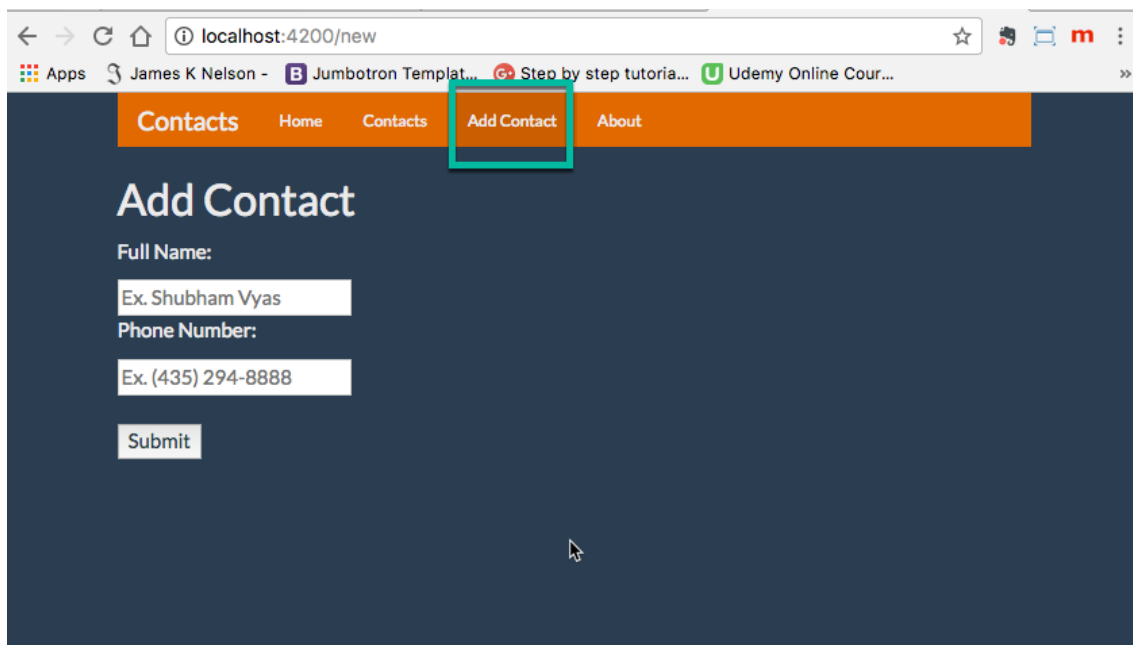
When you enter `http://localhost:4200` in your web browser's address bar, the application loads and displays a view that shows the home page. At the top of the page will be a nav-bar that allows you to access Home, Contacts, and About links. These links all work and when accessed, their associated components behave as expected. You are encouraged to interact with the application to get a sense of how it functions.

- What you don't see in the app is a way to add a new contact. From the terminal run the following Angular CLI command to generate a component for adding a new contact.

```
ng g c new
```

- Modify your code so that an Add Contact link is added to the nav-bar and the client can navigate to the NewComponent. See Figure 1.

Figure 1: App with link to newComponent, highlighted



- Update the template for the NewComponent so that it shows a form as depicted in Figure 1.

- d. Add functionality to the NewComponent class so that it uses the ContactService declared in ../contact.service.ts to add the newly added contact to the list of contacts when the client fills the form fields and clicks the Submit button.
- e. Add code to the NewComponent class to navigate to the ContactComponent after a new contact is added. The list of contacts displayed should now include the new contact that was just added.

2. (16 points) Study the code in ./contact.service.ts to better understand how the ContactService works. The ContactComponent in ./contact/contact.component.ts uses the service to query and manage the list of contacts.

The ContactService appears to work, but it has not been thoroughly tested. Boilerplate code for testing the service is provided in ./contact.service.spec.ts. Complete the tests in that file so that they all pass. You might want to exclude the tests in your newly created NewComponent if the tests for that component is failing.

There are several TODO: items in ./contact.service.spec.ts. that should focus your attention to where you need to add your code.

3. (4 points) After you have completed your tests for the ContactService, you should get the tests that were generated by Angular CLI for your NewComponent to work. You only need to ensure that all tests run and no test fails. You do not need to add new tests beyond those generated.

4. (0 points) Be sure to commit and push your solution to your git repository for grading.

Be sure to turn in these instructions when you leave the examination room.